ABSTRACT

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Title: *In vitro* screening of novel potentially active antibacterial compounds III

Since the discovery of penicillin, antibiotics have become part of modern therapeutic approaches. But the global spread of resistance makes their future uncertain. It is necessary to find new antibacterial substances useful in practice. As resistance is a global threat, the theoretical part deals with this issue. In addition to resistance, the theoretical part also briefly describes the antibiotics used, including new antibiotics, which were recently registered or likely to be registered. For selected groups, their mechanism of action is described in detail. Sensitivity should be determined to correctly indicate the antibiotic treatment. For this reason, the theoretical part also describes methods by which the sensitivity of a microbe to an antibiotic can be determined qualitatively or quantitatively. The theoretical part does not neglect the history of the development of antibacterial substances and familiarization with antibiotic policy in the Czech Republic.

This diploma thesis is based on screening of potentially antibacterial compounds and determination of their minimum inhibitory concentration using the microdilution broth method. The experimental part describes the procedure of the work, including the characteristics of tested strains and information about the tested substances. A total of 54 substances were tested and activity against some bacteria was recorded for 11 of them. Sensitivity of strains to these compounds are recorded in the results of the experimental part of this work.

Key words: antibiotics, bacteria, resistance, minimum inhibitory concentration, microdilution broth method.